



Corophiidae*

ALAN A. MYERS

*Department of Zoology, Ecology and Plant Science, National University of Ireland Cork, Enterprise Centre, Lee Fields, Cork, Ireland.
(bavayia@googlemail.com)*

* *In*: Lowry, J.K. & Myers, A.A. (Eds) (2009) Benthic Amphipoda (Crustacea: Peracarida) of the Great Barrier Reef, Australia. *Zootaxa*, 2260, 1–930.

Abstract

Two genera and two species of corophiids are reported from the Great Barrier Reef. Both species are new to science.

Key words: Crustacea, Amphipoda, Corophiidae, Great Barrier Reef, Australia, taxonomy, new genus, new species, *Paracorophium nana*, *Pumiliophotis queenslandicus*

Introduction

The Corophiidae are mainly benthic filter-feeding amphipods, that pump water through a tube or burrow and use sieve setae on the second pair of gnathopods to trap particles. Some corophioids may also use enlarged second antennae to scrape food material from the substrate surface towards the mouthparts, however, neither of the two species described here from the Great Barrier Reef employ this feeding method. Many corophiids live in brackish waters and even in freshwater. Corophiids are worldwide in distribution.

Material and methods

The descriptions were generated from a DELTA database (Dallwitz 2005) to the corophiid species of the world. Material was hand-collected on snorkel and is lodged in the Australian Museum, Sydney (AM). A set of colour plates, a list of standard abbreviations and detailed station data is available in Lowry & Myers (2009). A CD (*Benthic Amphipoda (Crustacea: Peracarida) of the Great Barrier Reef: Interactive Keys*) is available with the book or the keys can be accessed at the crustacea.net website.

Corophiidae Leach, 1814

Corophiinae Leach, 1814

Paracorophium Stebbing, 1899

Paracorophium nana sp. nov.

(Figs 1, 2)

Type material. Holotype, male, 1.8 mm, AM P70806, Ferriers Creek, Lizard Island (14°39'56"S 145°27'03"E), algae from rocks at edge of mangroves (*Rhizophora stylosa*), hand collected, 0.5 m, S.E.

LeCroy, R.A. King, K.N. Klebba & T. Krapp-Schickel, 23 February 2005 (QLD 1655). Paratype: female, 1.9 mm, same data as holotype, AM P70806 (QLD 1655).

Other material examined. 1 male, AM P70805 (QLD 1655); 2 females, AM P70924 (QLD 1677); 1 male, 7 females SEL/LZI 6-2.

Type locality. Ferriers Creek, Lizard Island, Queensland, Australia.

Etymology. Named for its very small size.

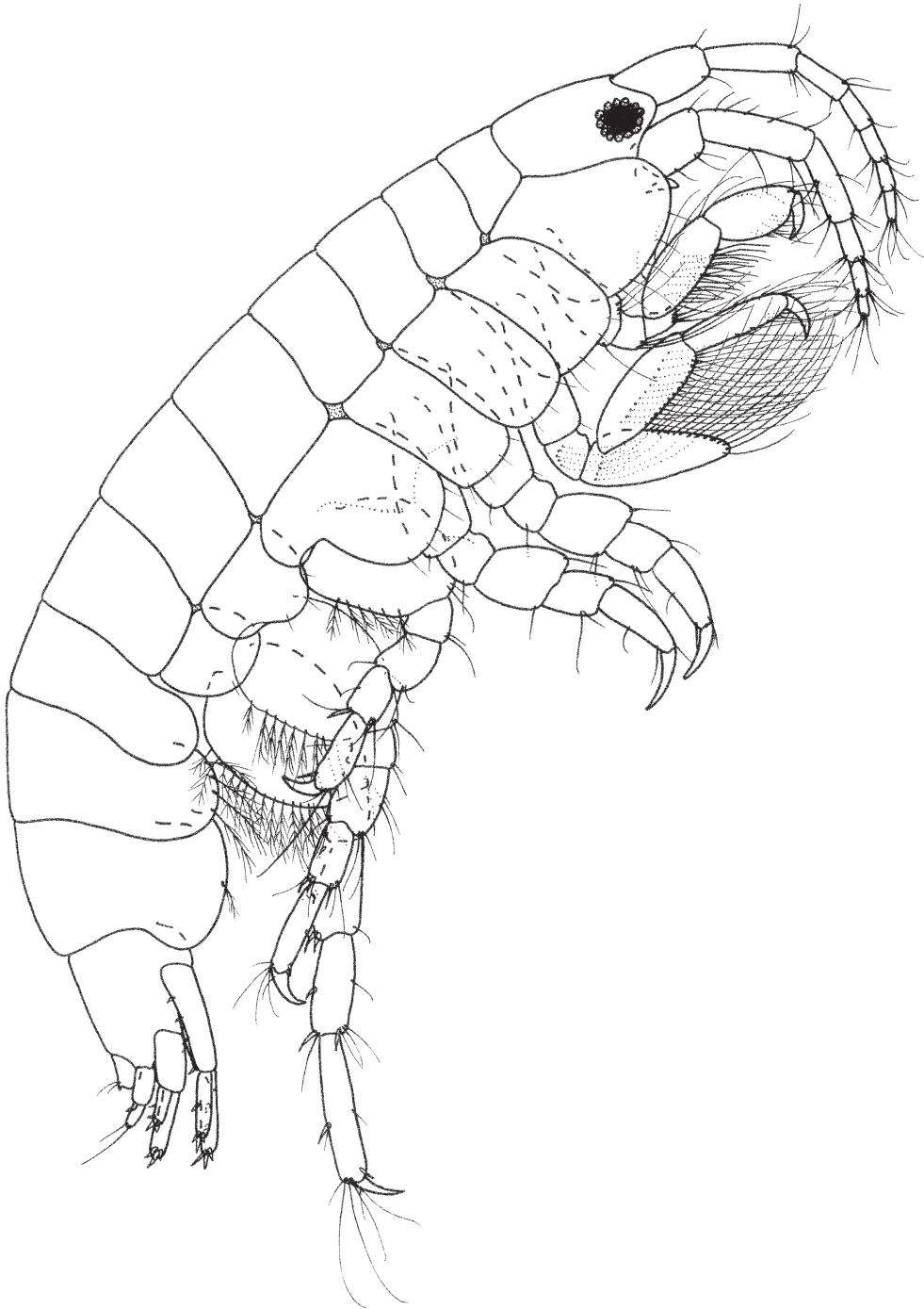


FIGURE 1. *Paracorophium nana* **sp. nov.**, holotype, male 1.8 mm, AM P70806, Ferriers Creek, Lizard Island, Great barrier Reef.

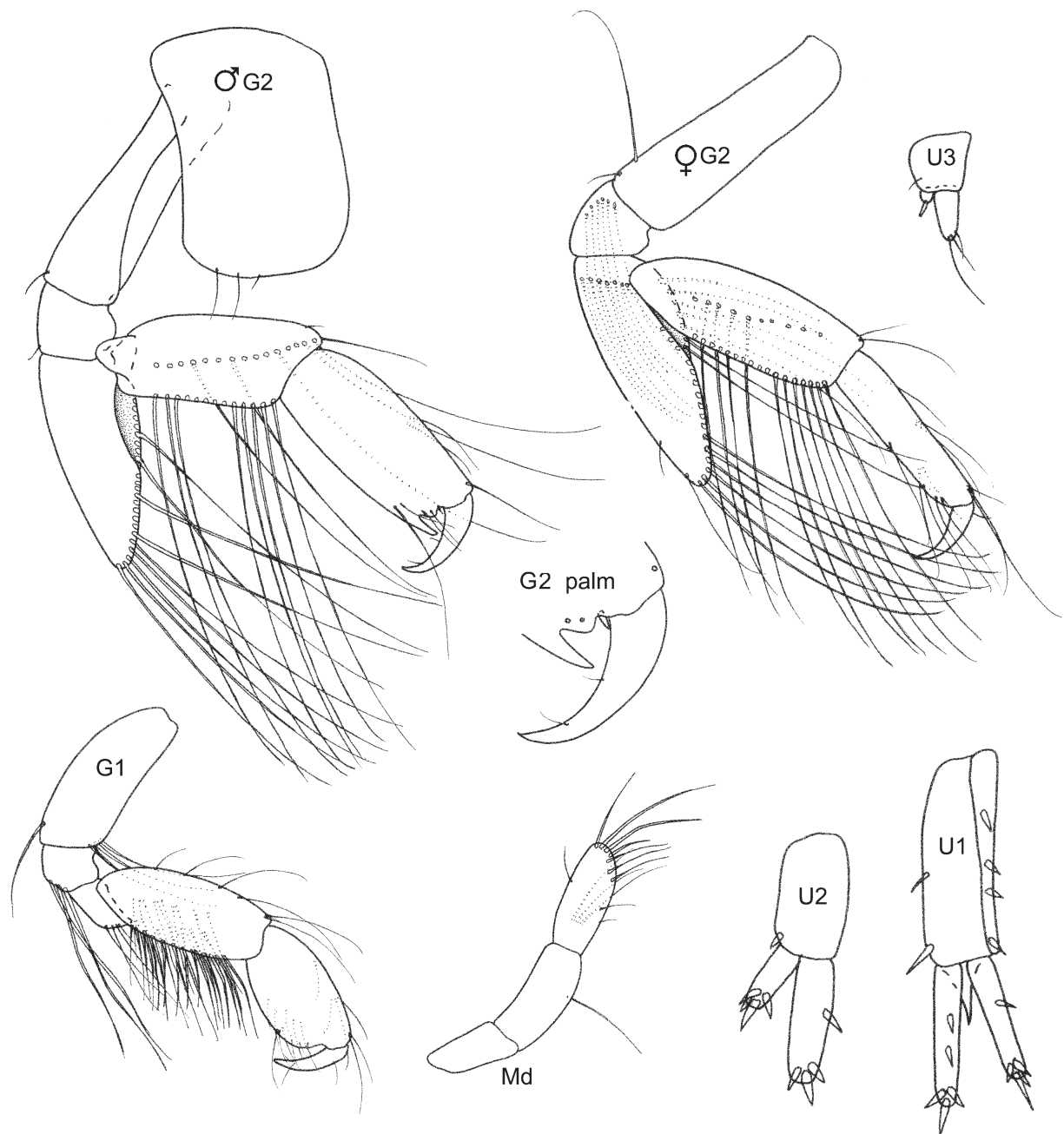


FIGURE 2. *Paracorophium nana* **sp. nov.**, holotype, male 1.8 mm, paratype, female 1.9 mm, AM P70806, Ferriers Creek, Lizard Island, Great barrier Reef.

Description. Based on holotype, male 1.8 mm, AM P70806.

Head. Head lateral cephalic lobes rounded; eye large, composed of many ommatidia. *Antenna 1* very short, less than one third body length; flagellum composed of 4–5 articles; accessory flagellum absent. *Antenna 2* short, subequal in length with antenna 1; article 4 lacking a posterodistal lobe; flagellum with 3 articles. *Mandible* palp articles 2 and 3 subequal; article 3 subovoid with long distal setae.

Pereon. *Gnathopod 1* coxa enlarged, distally expanded; carpus longer than propodus, posterior margin densely setose; propodus subchelate. *Gnathopod 2* merus enlarged and distally free, with dense long setae

forming a sieve together with setae on carpus; propodus slender, twice as long as broad, with posterodistal spine and palmar excavation; dactylus greatly overlapping palm. *Pereopods* 5–7 basis posterior margin with dense pectinate setae.

Pleon. *Urosomites* fused. *Uropod* 1 peduncle with short distoventral spine; rami margins with robust setae and with terminal cluster of robust setae. *Uropod* 2 inner ramus subequal in length with peduncle; outer ramus much shorter than inner ramus. *Uropod* 3 biramous; peduncle without distal expansion; outer ramus minute.

Female (sexually dimorphic characters). Based on paratype, female, 1.9 mm, AM P70806. *Gnathopod* 2 propodus slender, lacking posterodistal spine.

Habitat. Algae near mangroves.

Remarks. This species is similar to *P. brisbanensis* Chapman, 2002, but differs in a number of ways. The male antenna 2 article 4 lacks a posterodistal lobe; the mandible palp is much shorter with article 3 sub-ovoid; the carpus of gnathopod 1 is much more slender; the propodus of gnathopod 2 is also slender with a short posterodistal spine and weakly developed palmar spine; uropods 1–2 have fewer, weaker robust setae; the uropod 1 distoventral spine is acute (rounded in *P. brisbanensis*); uropod 3 inner ramus has a marginal robust seta (absent in *P. brisbanensis*). In addition, this species is much smaller, at less than 2.0 mm (*P. brisbanensis* up to 4.4 mm).

Distribution. *Australia*. Queensland: Lizard Island (current study).

Protomedeiinae Myers & Lowry, 2003

Pumiliophotis gen. nov.

Type species. *Pumiliophotis queenslandicus* sp. nov.

Etymology. From the latin ‘*pumilio*’ meaning dwarf, referring to its diminutive size.

Diagnosis. Antenna 1 without accessory flagellum; gnathopod 1 and 2 together not forming a sieving structure; gnathopod 1 simple in both sexes; male gnathopod 2 subchelate; female gnathopod 2 simple; coxa 1 the largest, produced forward; pereopod 7 not markedly longer than pereopod 6; uropods 1 and 2 rami lacking dense array of robust setae; uropod 1 lacking ventrodistal spine; uropod 3 uniramous.

Included species. *Pumiliophotis queenslandicus* (monotypy).

Remarks. Like *Cheiriphotis* Walker (1904) and *Microphotis* Ruffo (1952), but differing in the simple gnathopod 1 of the male and simple gnathopods 1 and 2 in the female. Differing from *Cheiriphotis* also in lacking an accessory flagellum and from *Microphotis* in lacking a distoventral spine on uropod 1. Differing from *Photis* and *Microprotopus* in the shorter coxae and in having coxa 1 the largest.

Pumiliophotis queenslandicus sp. nov.

(Figs 3, 4)

Type material. Holotype, male, 1.5 mm, AM P70888, Watsons Bay, Lizard Island (14°39'56"S 145°27'03"E), sand and rubble from patch reef, hand collected on snorkel, 2 m, S.E. LeCroy, R.A. King, K.N. Klebba & T. Krapp-Schickel, 25 February 2005 (QLD 1653). Paratype: female, 1.5 mm, same data as holotype, AM P70888 (QLD 1653).

Additional material examined. 1 badly damaged specimen, AM P70770 (QLD 1653)

Type locality. Watsons Bay, Lizard Island, Queensland, Australia.

Etymology. Named after the type locality.

Description. Based on male, holotype 1.5 mm AM P70888.

Head. Head lateral cephalic lobes triangular, sub-acute. Eye small, composed of less than 10 ommatidia. *Antenna* 1 short, about half body length; flagellum with 6 articles; accessory flagellum absent. *Antenna* 2

subequal in length with antenna 1; flagellum with 4 articles. *Gnathopod 1* carpus posterior margin weakly setiferous; propodus simple. *Mandible* palp article 3 a little longer than 2, slender with distal setae only.

Pereon. *Gnathopod 1* simple; coxa enlarged, distally expanded; carpus and propodus subequal. *Gnathopod 2* basis enlarged, anterior margin with flange; merus not enlarged, with few short setae only; propodus much less than twice as long as broad, with posterodistal spine and palmar excavation. *Pereopods 5–7* basis greatly expanded, with large, convex posterior flange, with few simple setae.

Pleon. *Urosomites 1–3* free. *Uropod 1* peduncle elongate, much longer than rami, without distoventral spine; rami margins without setae, but with a single terminal robust seta. *Uropod 2* inner ramus shorter than peduncle; outer ramus a little shorter than inner ramus. *Uropod 3* uniramous; peduncle with distal expansion.

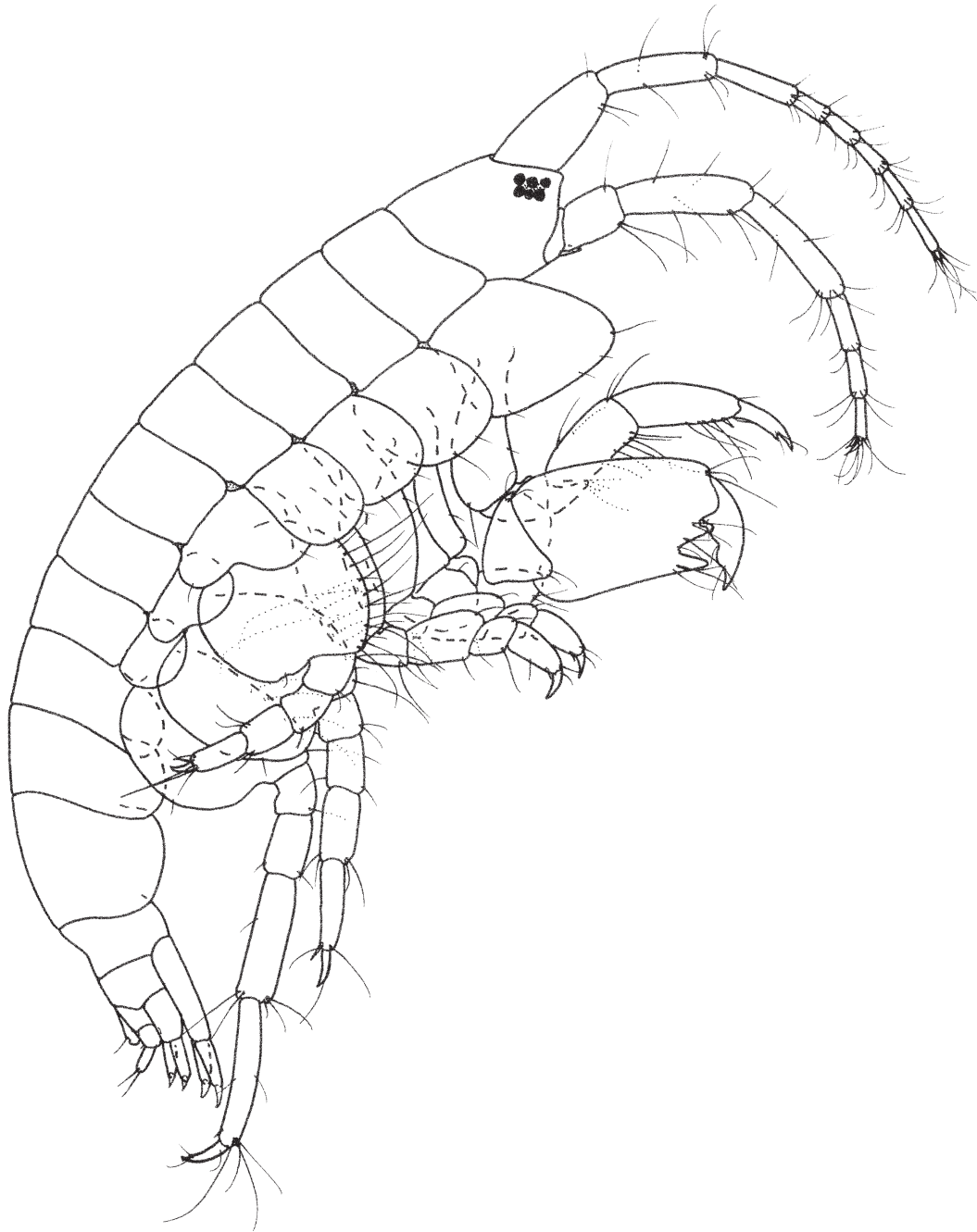


FIGURE 3. *Pumiliophotis queenslandicus* sp. nov., holotype, male, 1.5 mm, AM P70888, Watsons Bay, Lizard Island, Great barrier Reef.

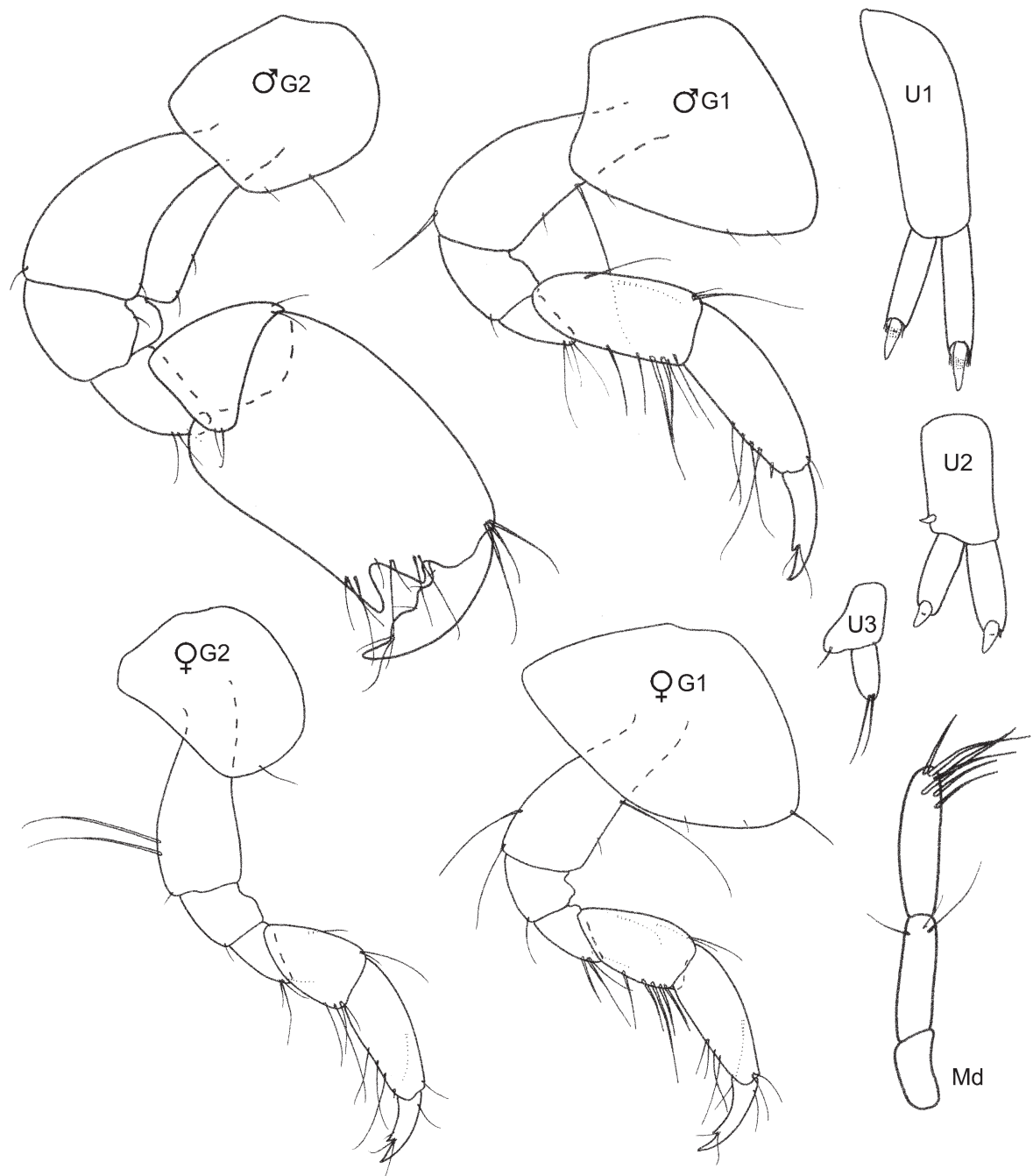


FIGURE 4. *Pumiliophotis queenslandicus* sp. nov., holotype, male, 1.5 mm, female 1.5 mm, AM P70888, Watsons Bay, Lizard Island, Great barrier Reef.

Female (sexually dimorphic characters). Based on paratype, female, 1.5 mm, AM P70888. *Gnathopod 2* simple, similar to gnathopod 1, but carpus shorter.

Habitat. Sand and rubble.

Remarks. The simple gnathopod 1 of both sexes and simple gnathopod 2 of the female, distinguish this species from all species in the genera *Cheiriphotis* Walker, 1904, and *Microphotis* Ruffo, 1952. It also differs from *Photis* Krøyer, 1842 and *Microprotopus* Norman, 1867, in having coxa 1 smaller than coxa 2 and the uropod 3 peduncle not expanded distally.

Distribution. *Australia.* Queensland: Watsons Bay, Lizard Island (current study).

References

- Chapman, M.A. (2002) Australasian species of *Paracorophium* (Crustacea: Amphipoda): the separate identities of *P. excavatum* (Thomson, 1884) and *P. brisbanensis* sp. nov. *Journal of the Royal Society of New Zealand*, 32(2), 203–228.
- Dallwitz, M.J. (2005) Overview of the DELTA System. <http://delta-intkey.com>. Last accessed (8/9/2007).
- Krøyer, H. (1842) Une nordiske Slaegter og Arter af Amfipodernes Orden, henhørende til Familien Gammarina. (Forelobigt Uddrag af et større Arbejde). *Naturhistorisk Tidsskrift*, 4, 141–166.
- Leach, W.F. (1814) Crustaceology. The Edinburgh Encyclopaedia, 7, 402–403.
- Lowry, J.K. & Myers, A.A. (2009) Foreword. In: Lowry, J.K. & Myers, A.A. (Eds), Benthic Amphipoda of the Great Barrier Reef, Australia. *Zootaxa*, 2260, 17–108.
- Myers, A.A. & Lowry, J.K. (2003) A phylogeny and a new classification of the Corophioidea Leach, 1814 (Amphipoda). *Journal of Crustacean Biology*, 23(2), 443–485.
- Norman, A.M. (1867) Report of the committee appointed for the purpose of exploring the coasts of the Hebrides by means of the dredge. Part II. On the Crustacea, Echinodermata, Polyzoa, Actinozoa, and Hydrozoa. *British Association for the Advancement of Science*, Report for 1866, 193–206.
- Ruffo, S. (1952) *Microphotis blachei* n. gen. n. sp. (Amphipoda-Photidae) delle acque del fiume Mekong (Cambogia). *Memorie del Museo Civico di Storia Naturale di Verona*, 3, 35–40.
- Stebbing, T.R.R. (1899) Revision of Amphipoda. *Annals and Magazine of Natural History*, 7(3), 350.
- Walker, A.O. (1904) Report on the Amphipoda collected by professor Herdman, at Ceylon in 1902. *Report to the Government of Ceylon on the Pearl Oyster Fisheries of the Gulf of Manaar, Supplementary Report*, 17, 229–300.